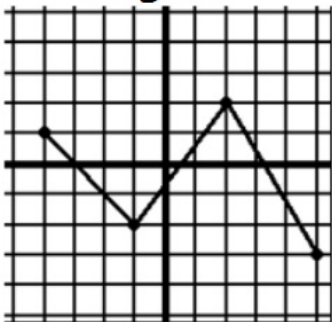


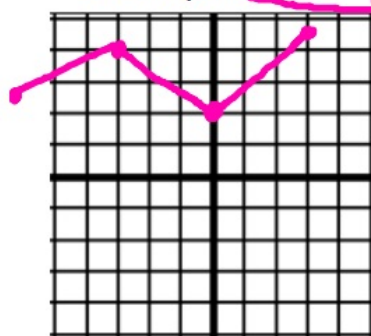
Bellwork: 10/23/12

Perform the indicated transformations:

original



$-1/2 f(x+2) + 3$



$a = -\frac{1}{2}$ y value $\cdot -\frac{1}{2}$
 $k = 3$ y value $+ 3$
 $h = -2$ x value $- 2$

Points are:

<u>$x - 2$</u>	<u>$y \cdot -\frac{1}{2}$</u>	<u>$y + 3$</u>
$(-4, 1)$		$(-6, 2.5)$
$(-1, -2)$		$(-3, 4)$
$(2, 2)$		$(0, 2)$
$(5, -3)$		$(3, 4.5)$

Graphing Absolute Value Functions

General Function:

$$y = a|x - h| + k$$

where $a =$ _____

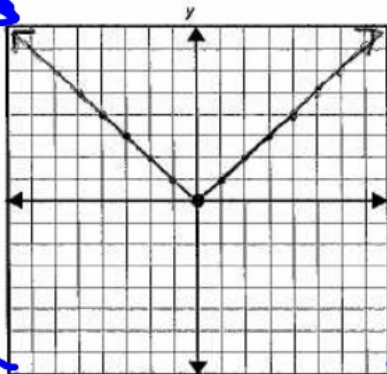
$(h, k) =$ vertex

$$y = |x|$$

$$h = 0 \quad k = 0$$

vertex: $(0, 0)$

$$a = 1$$



over 1 up 1

over 2 up 2

over 3 up 3

$$h = 0 \quad k = 2$$

$$1. \quad y = |x| + 2$$

$$a = 1$$

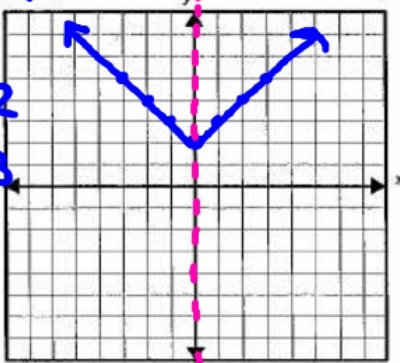
Vertex = $(0, 2)$

(h, k)

over 1 up 1

over 2 up 2

over 3 up 3



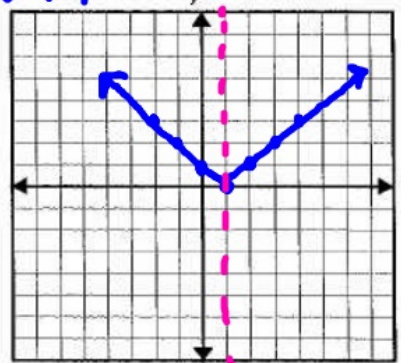
$$h = 1 \quad k = 0$$

$$2. \quad y = |x - 1|$$

$$a = 1$$

Vertex = $(1, 0)$

(h, k)

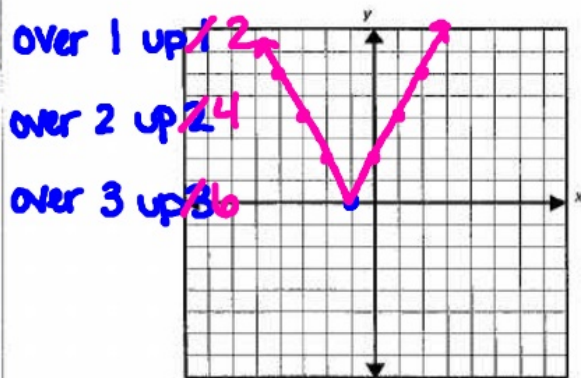


$$h=-1 \quad k=0$$

$$a=2$$

$$3. \quad y = 2|x+1|$$

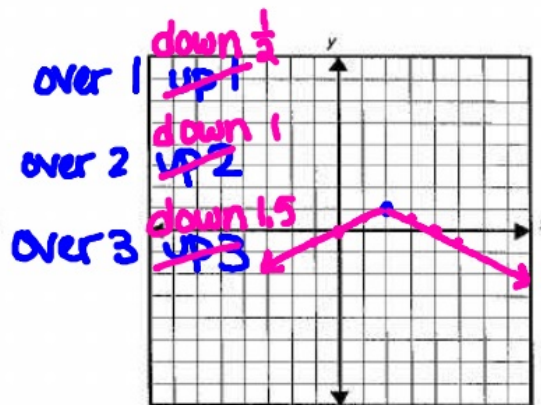
$$\text{Vertex} = (-1, 0)$$



$$h=2 \quad k=1$$

$$4. \quad y = -\frac{1}{2}|x-2|+1$$

$$\text{Vertex} = (2, 1)$$

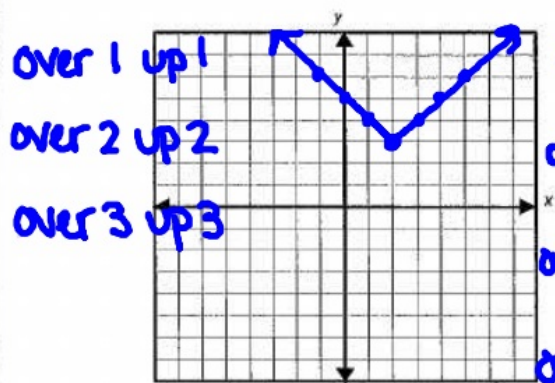


$$h=2 \quad k=3$$

$$a=1$$

$$5. \quad y = |x-2|+3$$

$$\text{Vertex} = (2, 3)$$

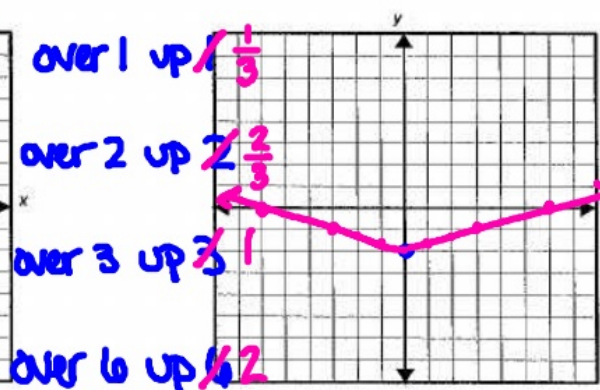


$$h=0 \quad k=-2$$

$$a=\frac{1}{3}$$

$$6. \quad y = \frac{1}{3}|x|-2$$

$$\text{Vertex} = (0, -2)$$

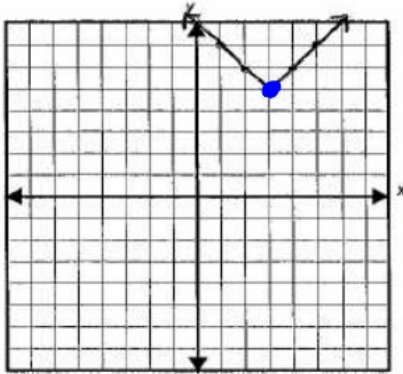


$$y = a|x-h| + k$$

Find the equation of each graph shown below:

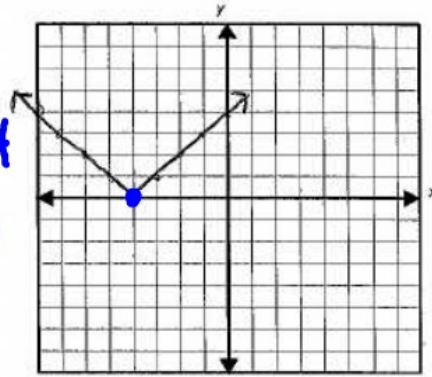
7. $y = |x-3| + 5$

$$\begin{aligned} a &= 1 \\ h &= 3 \\ k &= 5 \end{aligned}$$



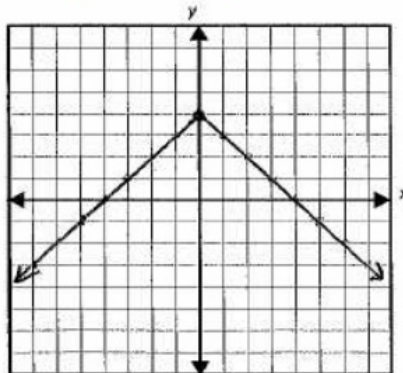
8. $y = |x+4|$

$$\begin{aligned} a &= 1 \\ h &= -4 \\ k &= 0 \end{aligned}$$



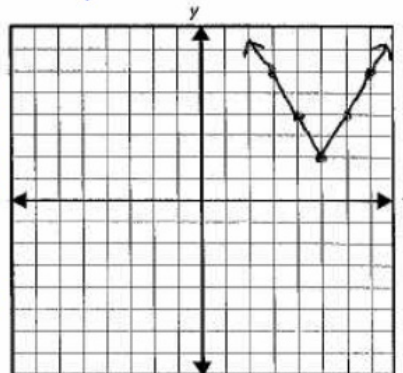
9. $y = -|x| + 4$

$$\begin{aligned} a &= -1 \\ h &= 0 \\ k &= 4 \end{aligned}$$



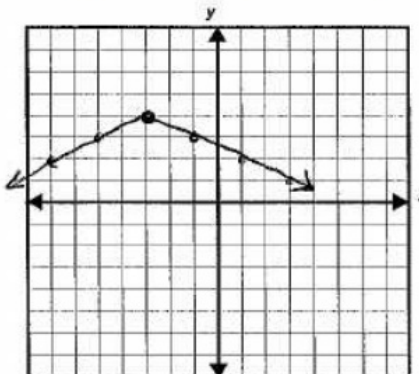
10. $y = 2|x-5| + 2$

$$\begin{aligned} a &= 2 \\ h &= 5 \\ k &= 2 \end{aligned}$$



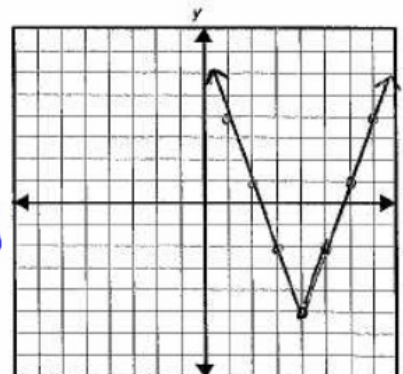
11. $y = -\frac{1}{2}|x+3| + 4$

$$\begin{aligned} a &= -\frac{1}{2} \\ h &= -3 \\ k &= 4 \end{aligned}$$



12. $y = 3|x-4| - 5$

$$\begin{aligned} a &= 3 \\ h &= 4 \\ k &= -5 \end{aligned}$$



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